Divar - Digital Versatile Recorder - Easy

Security Systems

EN | Installation Instructions

BOSCH

Divar - Easy

Digital Versatile Recorder

Installation manual

Chapters

1. Introduction
2. Quick install
3. Operating instructions
4. Hardware setup
5. Menu system
6 Using the Configuration Tool
7 Menu default values
8. Technical specifications

Introduction 1-1
Digital video recorder for security applications 1-1
Versions 1-2
Features 1-2
On-screen help 1-2
Unpacking 1-2
Package contents 1-3
Installation environment 1-3
Associated equipment 1-4
DVD writer** 1-4

Quick install 2-1
Primary connections 2-3
Optional connections 2-3
Powering up 2-3
First-time use 2-3
Quick install menu > 2-4
Language 2-4
Time Zone 2-4
Time format 2-4
Time 2-4
Date format 2-4
Date 2-4
Active cams 2-4
Recording settings 2-4
Network settings 2-4
Save & exit 2-4
Cancel 2-4
Recording settings 2-5
Day period 2-5
Weekend 2-5
Rec day 2-5
Rec night 2-5
Rec weekend 2-5
Enable alarm inputs for 2-5
Alarm input recording 2-5
Enable motion for 2-5
Motion recording 2-5
Approximate recording duration 2-6
Network settings 2-6
DHCP 2-6
DVR name 2-6
IP address, Subnet mask and Default gateway 2-6
MAC address 2-6
Bandwidth limit 2-6

Operating instructions 3-1
Front panel controls 3-2
Indicators 3-3
Keys 3-3
Primary functions 3-4
Alternate functions 3-5
Viewing pictures 3-6
Viewing 3-6
Live, playback and search modes 3-8
Live mode 3-8
Playback mode 3-8
Search mode 3-9
Search criteria 3-9
Search results 3-9
Triggers and alarms 3-10
Alarm inputs 3-11
Video loss alarm 3-11
Multiple alarms 3-11

Hardware setup 4-1
Rack mounting 4-2
Camera connections 4-2
Monitor connection 4-3
Console port connection 4-3
Keyboard connection 4-4

Ethernet connection 4-5
Control port 4-6
External I/O connection 4-7
Power Supply 4-8
Testing 4-9
Maintenance 4-9

Menu system 5-1
Overview of the menu system 5-2
Accessing the menu from the unit 5-2
Main Menu 5-3
History > 5-4
History Filter 5-4
History List 5-4
Disk manager > 5-4
Status Overview 5-4
Local archiving** 5-5
Authenticity Check 5-6
Delete Video 5-6
Erase Disk 5-6
Time/Date > 5-6
Synchronize 5-6
View Settings > 5-7
Camera setup 5-7
Sequences 5-7
Configure Monitor 5-7
System Settings > 5-8
Recording Setup 5-8
Event Setup 5-8
History Log Setup 5-9
Local Passwords 5-9
Connectivity 5-9
Profiles > 5-10
Calendar setup 5-10
System behavior 5-10

Using the Configuration Tool 6-1
Getting started 6-2
System requirements 6-2
Installing the Configuration Tool 6-2
Starting the Configuration Tool 6-2
How to Log in 6-3
Menu structure differences 6-4
Introducing the main window 6-5
Overview button 6-5
History button 6-5
Settings button 6-5
Service button 6-5
Help button 6-6
Logout button 6-6
Using the control buttons 6-6

Menu default values 7-1

Technical specifications 8-1
Electrical 8-2
Mechanical 8-3
Environmental 8-3
Accessories (Optional) 8-3

SAFETY PRECAUTIONS

CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT OPEN COVERS. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This label may appear on the bottom of the unit due to space limitations.

The lightning flash with an arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE AND OBJECTS WITH LIQUIDS, SUCH AS VASES, SHOULD NOT BE PLACED ON THIS APPARATUS.

Attention: Installation should be performed by qualified service personnel only in accordance with the National Electrical Code or applicable local codes.

Power Disconnect. Units have power supplied whenever the power cord is inserted into the power source. The power cord is the main power disconnect for all units.

The socket outlet shall be installed near the equipment and shall be easily accessible.

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.

2. Keep these instructions.

3. Heed all warnings.

4. Follow all instructions.

5. Do not use this apparatus near water.

6. Clean only with a dry cloth.

7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider that the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or third prong are provided for your safety. If the provided plug does not fit into the outlet, consult an electrician for replacement of the obsolete outlet.

10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11. Only use attachments/accessories specified by the manufacturer.

12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/ apparatus combination to avoid injury from tip-over.

13. Unplug this unit during lightning storms or when unused for long periods of time.

14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moistue, does not operate normally, or has been dropped.

15. Moving - Disconnect the power before moving the unit. The unit should be moved with care. Excessive force or shock may result in damage to the unit and the hard disk drives.

16. Power Sources - This unit should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply you plan to use, consult your appliance dealer or local power company.

17. Overloading - Do not overload outlets and extension cords as this can result in a risk of fire or electric shock.

18. Object and Liquid Entry - Never push objects of any kind into this unit through openings, as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the unit.

19. Replacement Parts - When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

20. Safety Check - Upon completion of any service or repairs to this unit, ask the service technician to perform safety checks to determine that the unit is in proper operating condition.

21. Coax Grounding - If an outside cable system is connected to the unit, be sure the cable system is grounded. U.S.A. models only--Section 810 of the National Electrical Code, ANSI/NFPA No.70-1981, provides information with respect to proper grounding of the mount and supporting structure, grounding of the coax to a discharge unit, size of grounding conductors, location of discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

ATTENTION

Video loss is inherent to digital video recording; therefore Bosch Security Systems cannot be held liable for any damage that results from missing video information. To minimize the risk of lost digital information, Bosch Security Systems recommends the implementation of multiple, redundant recording systems and a procedure to backup all analog and digital information.

FCC & ICES INFORMATION

(U.S.A. and Canadian Models Only)

This is a Class B product. This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undisired operation.

The internal DVD writer is a laser product. The following classification label is located on the drive.

CLASS 1 LASER PRODUCT
CAUTION:
INVISIBLE LASER RADIATION WHEN OPEN.
AVOID EXPOSURE TO BEAM.

Reference

Definition of terms

Cameo: Single camera picture in a multiscreen display.

Dwell time: The length of time that an alarm indicator continues to operate after the event causing it has occurred. The length of time a single image of a sequence is shown.

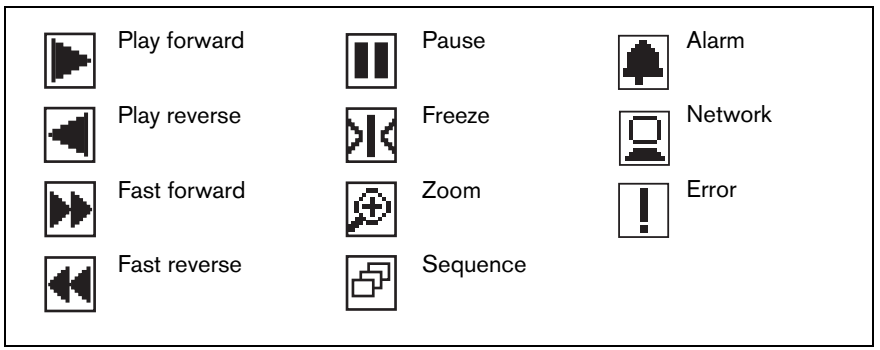
Full-screen: A display that only shows one picture occupying a full screen.

Multiscreen: The division of a display screen so that it shows a certain number of cameras at the same time.

Sequence: Camera pictures shown one after the other in time either in full-screen or quad modes.

Quad: Four camera pictures shown on one display screen.

Icons shown on the screen



CHAPTER 1

Introduction

Digital video recorder for security applications

The Divar - Easy is a video recording system that can record multiple camera signals while simultaneously providing live multiscreen viewing and playback. It combines the functionality of a digital recorder with a multiplexer and a switcher.

The unit has comprehensive search and playback facilities for viewing stored video. Once set up, all recording takes place in the background without requiring operator intervention. Maximum recording rates of 60 (NTSC) and 50 (PAL) images per second in total are guaranteed with unsynchronized cameras. The recording rate and quality are selectable.

All models have extensive alarm handling functions and telemetry control. The unit can be easily operated and programmed via the front panel control keys and on-screen display menu system. One monitor output provides full-screen, quad and multiscreen viewing. A keyboard can be connected for PTZ control and to improve the ease-of-use.

Via a network, the Control Center PC-application can be used for live viewing, playback and configuration. Two simultaneous users can control multiple Divars. The Divar includes an authenticity check for both local and remote playback. A dedicated PC player is provided for playback of secure video files. Additionally, a web browser on a PC can be used to view live images or playback recordings from a Divar. The PC-based Configuration Tool facilitates the setup of the unit.

Auto-terminating video inputs, alarm inputs and outputs, and remote control connectors are on the rear panel. The monitor output provides a CVBS video signal in either NTSC or PAL. Monitor A displays full-screen or multiscreen digital pictures that can be frozen and zoomed.

Versions

There are various Divar models; 6-channel, 9-channel and 16-channel, each with various storage capacities. In addition, a Divar can have an internal DVD writer.

A Divar with an internal DVD writer allows you to make archives locally without the need for a PC. The writer supports DVD+RW, DVD+R, CD-R and CD-RW media.

This manual describes the 16-channel version with an internal DVD writer.

Both 6-channel and 9-channel versions operate in exactly the same way except that fewer cameras can be connected, there are fewer camera keys and the number of multiscreen views is reduced. Instructions that only apply to the internal DVD writer are indicated by a double (**) asterix.

Features

The Divar has the following features:

- 6, 9 or 16 auto-terminating camera inputs.
- Simultaneous recording and playback.
- Internal hard disk video storage.
- 10/100Base-T Ethernet port for Ethernet connection and networking.
- RS232 serial port for serial communications.
- External keyboard input for keyboard connection.
- Full-screen and various multiscreen display capabilities in live and playback modes.
- Motion detection.
- 16 switching (alarm) inputs and 4 alarm outputs.
- Video loss detection.
- Audible alarm.
- Pan, tilt and zoom camera control.
- Internal DVD writer**.

On-screen help

On-screen context-sensitive help is available for all topics. Just press the yellow ALT key ALT for at least one second to see the help text associated with your current activity. Press the escape key ESC to exit help.

For more information please visit:

www.boschsecuritysystems.com

Unpacking

Check the package for visible damage. If any items appear to have been damaged in shipment, notify the shipping company. Unpack carefully. This is electronic equipment and should be handled with care to prevent damage to the unit. Do not attempt to use the unit if any components are damaged. If any items are missing, notify your Customer Service Representative or Bosch Security Systems Sales Representative.

The shipping carton is the safest container in which to transport the unit. Save it and all packing materials for future use. If the unit must be returned, use the original packing materials.

Package contents

Check for the following items:

- Digital Video Recorder (Divar 16, Divar 9 or Divar 6 unit)
- Quick reference guide
- Divar operation manual
- Divar Control Center and Archive Player operation manual
- Installation manual (this manual)
- A 25-pin D-type connector board with screw terminals (used for switching and alarm connections)
- A 15-pin D-type connector board with screw terminals (used for PTZ connections)
- Power supply cord
- Network cross-over cable
- Serial RS232 cross-over (null-modem) cable
- Rack mounting kit
- A CD-ROM with the software and the manuals.

Installation environment

Mounting: The Divar is supplied as a desktop unit. If desired, the unit may be rack mounted using the rack mounting kit supplied with the unit.

Ventilation: Ensure that the location planned for the installation of the unit is well ventilated. Take note of the locations of the cooling vents in the unit's enclosure and ensure that they are not obstructed.

Temperature: Observe the unit's ambient temperature specifications when choosing an installation space. Extremes of heat or cold beyond the specified operating temperature limits may cause the unit to fail. Do not install the unit on top of hot equipment.

Power Supply: Ensure that the site's AC power supply is stable and within the rated voltage of the unit. If the site's AC power is likely to have spikes or power dips, use power line conditioning or an uninterruptable power supply (UPS).

Associated equipment

A typical system could contain the following components (not included with the unit):

- A primary monitor for multiscreen monitoring (monitor A).
- Cameras with 1 Vpp composite video outputs.
- 75-ohm BNC connectors and video coaxial cable for connecting the video signals.
- AC power supply outlet for the unit that allows for secure isolation. (The unit has no on/off switch for security reasons.)
- A keyboard (KBD-Digital).
- PC for Control Center and Configuration Tool applications.
- Pan/tilt/zoom control units.

DVD writer**

The following points should be taken into consideration when using the internal DVD writer:

- The DVD writer might not support all CD and DVD media. For a list of approved CD and DVD media (not supplied by Bosch), please visit www.boschsecuritysystems.com.
- After making an archive with the DVD writer, we advise you to test the CD or DVD media to verify that the archived data can be played back on a PC.
- To update the Archive Player software that is written to a CD/DVD when a local archive is made, insert the supplied CD into the DVD writer. The Divar automatically detects new Archive Player software. Follow the instructions that appear on your monitor screen to load the latest Archive Player software.
- The DVD writer supports the following write speeds:

DVD+R / DVD+RW:	4x (or higher)
CD-R:	40x (or higher)
CD-RW:	24x (or higher)

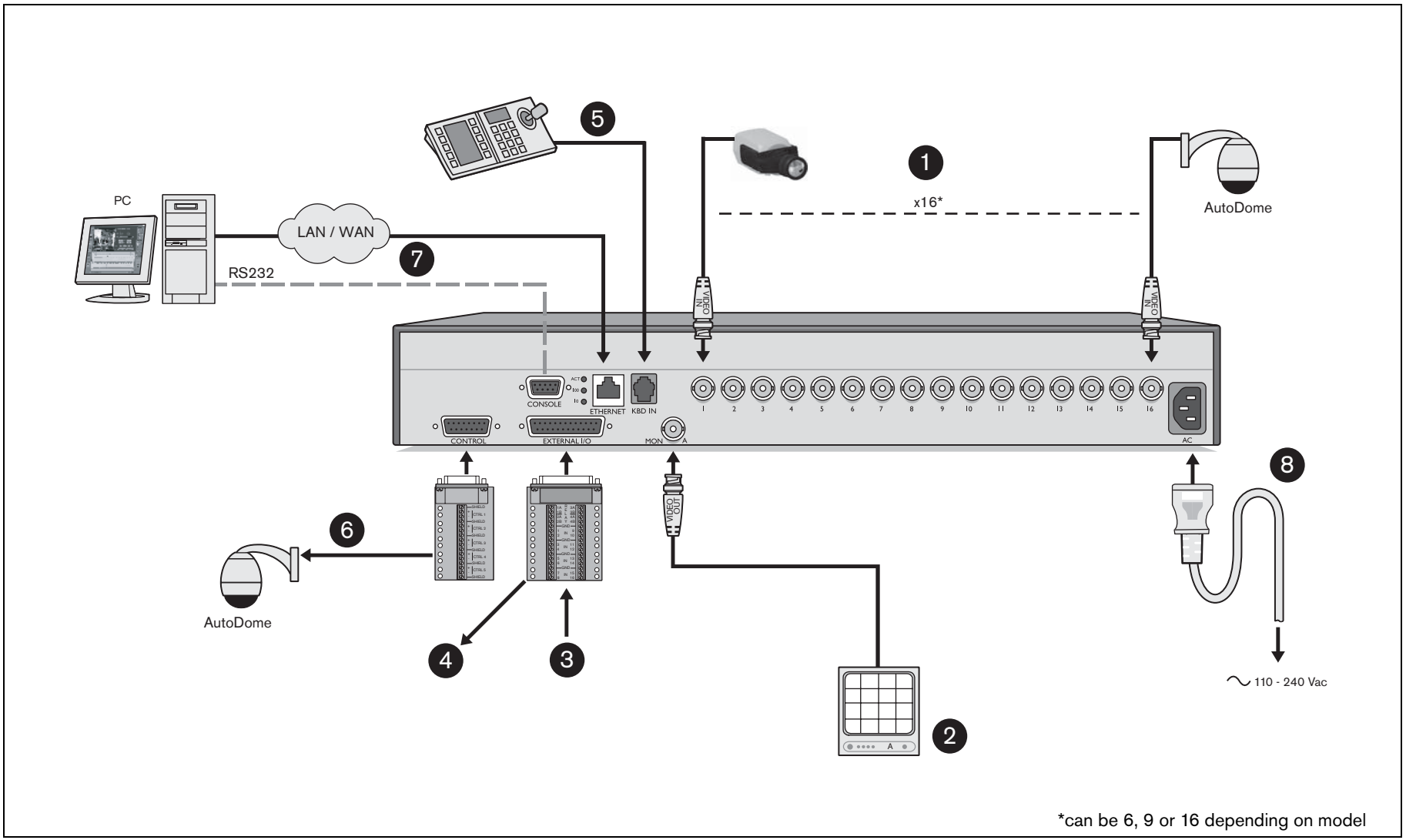
CHAPTER 2

Quick install

This chapter gives instructions on how to quickly get the unit operational. Make the connections described on the following pages and then enter the relevant data in the quick install menu.

The Quick Install menu appears the first time you start the unit. When you have entered the relevant information the unit will be operational.

Quick connection



Primary connections

1. Connect the cameras to the BNC camera inputs (automatically terminated).
2. Connect monitor A to the BNC output MON A.

Optional connections

3. Connect up to 16 (alarm) inputs via the supplied 25-pin D-type connector board.
4. Connect up to 4 alarm output relays via the supplied 25-pin D-type connector board.
5. Connect a keyboard unit to the KBD IN socket.
6. Connect a pan/tilt/zoom control unit via the supplied 15-pole D-type connector board
7. Connect to your network via the Ethernet port or use the RS232 connector to connect directly to a PC serial port.

Powering up

8. Switch on all connected equipment.
9. Connect the power cord to the unit.

First-time use

The unit starts with a multiscreen display. The Quick install menu opens the first time you use the unit. Fill in these basic settings to get the unit operational. Select the **Install** item to save your settings and close the menu. When you close the Quick install menu, the unit begins recording automatically.

To open the Quick install menu at any other time:

1. Press the ALT key ALT to enter the alternate function mode.
   > The ALT indicator lights.
2. Press the menu key .
   > The main menu appears full-screen on monitor A.

Select the System settings menu and then the Quick install submenu.

Navigating

- Use the arrow keys to move through a menu or list.
- Use the select key ↵ to select a submenu or item.
- Use the escape key ESC to go back or to switch off the menu.

QUICK INSTALL MENU >

QUICK INSTALL		
LANGUAGE	ENGLISH	
TIME ZONE	GMT +01:00 WEST EUROPE	
TIME FORMAT	24-HOUR	
TIME	19:45:00	
DATE FORMAT	YYYY-MM-DD	
DATE	2002-06-20	
RECORDING SETTINGS		>
NETWORK SETTINGS		>
SAVE & EXIT		>
CANCEL		

>> LANGUAGE
- Select the language for the menu from the list.

>> TIME ZONE
- Select a time zone from the list.

>> TIME FORMAT
- Select either a 12 or a 24 hour clock format.

>> TIME
- Fill in the actual time.

>> DATE FORMAT
- Select from three date formats which show either the month (MM), the day (DD) or the year (YYYY) first.

>> DATE
- Fill in the actual date.

>> ACTIVE CAMS
- Select the cameras you wish to activate. Only activated cameras are configured after exiting the Quick Install menu. Press the camera keys to select or deselect a camera. A check mark means selected.

>> RECORDING SETTINGS
- Opens recording settings submenu to fill in the basic recording settings for the day and weekend/night profiles.

>> NETWORK SETTINGS
- Opens network settings submenu to fill in the settings that control the behavior of the unit with respect to a network.

>> SAVE & EXIT
- Select this item to load the settings you have made into the unit and exit the Quick Install.

>> CANCEL
- Select this item to exit the Quick Install without saving.

>> RECORDING SETTINGS

RECORDING SETTINGS	
DAY PERIOD	8:00 18:00
WEEKEND	SAT AND SUN
REC DAY	1 IPS/CAM
REC NIGHT	2 IPS/CAM
REC WEEKEND	2 IPS/CAM
ENABLE ALARM INPUTS FOR	DAY/NIGHT
ALARM INPUT RECORDING	12.5 IPS/INPUT
ENABLE MOTION FOR	NIGHT
	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
	□□□□□□□□□□□□□□□□
MOTION RECORDING	5 IPS/CAM
APPROX. REC. DURATION	036 HOURS

>> DAY PERIOD

- Fill in a start time and an end time to define the period during which the day profile is active.
- The weekend/night profile is active for the rest of the 24-hour period.

>> WEEKEND

- When a day is defined as a weekend day, then the weekend/night profile is active that whole day.
- Define the weekend as either Saturday and Sunday or just Sunday.
- Select none if you wish the weekend to be the same as the other days of the week.

>> REC DAY

- Select the normal recording speed to be used for each of the activated cameras during the day profile.
- The Images Per Second (IPS) rates available for PAL range from 0, 1⁄10 (one image every 10 seconds), up to 25 IPS.
- The Images Per Second (IPS) rates available for NTSC range from 0, 1⁄10 (one image every 10 seconds), up to 30 IPS.

>> REC NIGHT

- Select the normal recording speed to be used for each of the activated cameras during the night profile.
- The Images Per Second (IPS) rates available for PAL range from 0, 1/10 (one image every 10 seconds), up to 25 IPS.
- The Images Per Second (IPS) rates available for NTSC range from 0, 1⁄10 (one image every 10 seconds), up to 30 IPS.

>> REC WEEKEND

- Select the normal recording speed to be used for each of the activated cameras during the weekend profile.
- The Images Per Second (IPS) rates available for PAL range from 0, 1⁄10 (one image every 10 seconds), up to 25 IPS.
- The Images Per Second (IPS) rates available for NTSC range from 0, 1⁄10 (one image every 10 seconds), up to 30 IPS.

>> ENABLE ALARM INPUTS FOR

- Select the profiles during which alarm inputs are enabled.
- Choose day only, weekend/night only, both day and weekend/night or none.

>> ALARM INPUT RECORDING

- An activated input alarm can increase the recording speed of a camera. Select the recording speed to be used when an input is activated.
- The camera with the number that corresponds to the alarm input number is recorded at the speed you set.

>> ENABLE MOTION FOR

- Select the profiles during which motion events are enabled Choose day, weekend/night, both day and weekend/night or none.
- Press the camera keys to select or deselect the cameras for which motion should be enabled. A check mark means enabled.

>> MOTION RECORDING

- A camera can be recorded at an increased recording speed when motion is detected. Select the recording speed to be used for each of the cameras when motion is detected.

>> APPROXIMATE RECORDING DURATION

- This is an estimate of the recording duration based on the total amount of storage space available and the recording setup. For event recording, the following parameters are used:
- During the day, one camera is in input alarm recording 5% of the time and every motion enabled camera is in motion recording 10% of the time.
- During the night and weekend, one camera is in input alarm recording 1% of the time and in motion recording for 3% of the time.

>> NETWORK SETTINGS

NETWORK SETTINGS	
DHCP	NO
DVR NAME	DIVAR
IP ADDRESS	192.168. 10.2
SUBNET MASK	255.255.255. 0
DEFAULT GATEWAY	0. 0. 0. 0
MAC ADDRESS	00:00:00:00:00:00
BANDWIDTH LIMIT	100 MBPS

>> DHCP

- Set DHCP to Yes to have IP address, subnet mask and default gateway assigned automatically by the network server. The actual values are displayed.

>> DVR NAME

- Enter a Divar name to be used in the network.

>> IP ADDRESS, SUBNET MASK AND DEFAULT GATEWAY

- Fill in the IP, subnet mask and default gateway addresses when DHCP is set to No.

>> MAC ADDRESS

- The MAC address is read only.

>> BANDWIDTH LIMIT

- Restrict the network bandwidth by entering an MBPS between 0 and 100 for the bandwidth limit.

CHAPTER 3

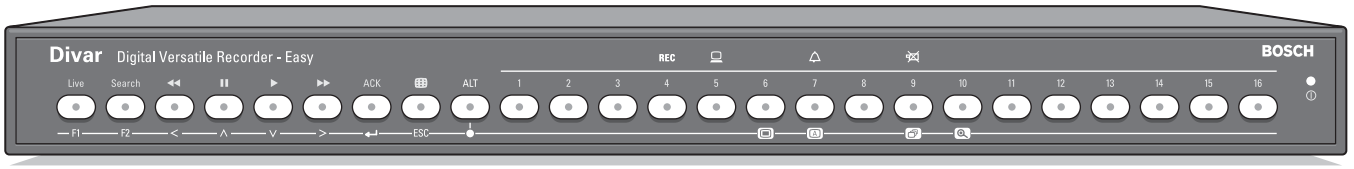
Operating instructions

The instructions in this chapter explain the purpose of the front panel keys. The functions available can be limited by setting passwords. Some functions may also require a software license.

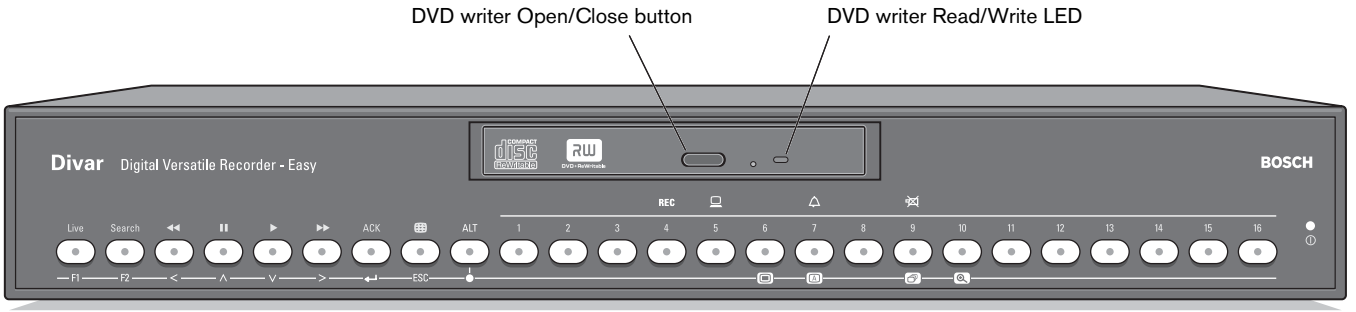
An administrator has access to many more functions in the menu. Refer to Chapter 5 - Advanced Menu Setup for a full list of available menu items.

Front panel controls

Divar



Divar with internal DVD writer



Indicators

The power indicator lights to indicate that power is being supplied to the unit.

The indicators across the top of the controls light or flash to alert you to various operating conditions.

REC	Record	-	lights when the unit is recording video.
	Network	-	lights when a remote user is connected to the unit.
	Alarm	-	flashes when an alarm is detected.
	Video loss	-	flashes when a video loss condition is detected for a camera input.

Keys

The keys on the front panel can be used for controlling primary functions or alternate functions. Symbols for the primary functions are shown above the keys. Symbols for the alternate functions are shown below the keys.

The alternate functions are activated by first pressing the ALT key ALT and then the desired key. When the alternate function mode is active, the light below the ALT key is lit.

The unit automatically exits the alternate mode if the monitor A key A or sequence key is pressed. When in a menu, the keys operate according to their alternate function.

Primary functions

(light below ALT key off)

Live Live key - press to switch to live viewing.

Search Search key - press to open a search menu to look for recorded events.

◀◀ Reverse key
- in live mode, press to start reverse playback of recordings for the displayed cameras.
- in playback mode, press to speed up rewind.
- in pause mode, press to step back one frame.

❚❚ Pause key
- in live mode, press to freeze a camera picture.
- in the playback mode, press to freeze playback picture; press for longer than one second to protect recordings or archive them to a DVD or CD.

▶ Play key
- in live mode, press to resume playback from the last used playback position.
- in pause mode, press to resume playback.

▶▶ Fast forward
- in live mode, press to start playback from one minute earlier.
- in playback mode, press to speed up the playback rate.
- in pause mode, press to step forward one frame.

ACK ACK key - press when flashing to acknowledge an alarm.

⊞ Multiscreen key- press to see different monitor display layouts.

ALT ALT key
- switches the front panel keys between a normal function and an alternate function (shown below the key).
- press for longer than one second to get on-screen help.

1 - 16 Camera keys
- press to see a full-screen display of the camera's picture.
- in the menu mode, press to select the camera or enter a password.

Alternate functions

(light below ALT key is lit)

F1 F1 key - restores defaults in active menu.

F2 F2 key - is assigned a specific function in some submenus.

Arrow keys: - move around through menu items or values.

< - Left

∧ - Up

∨ - Down

> - Right

↵ Select key - selects a submenu or menu item, or saves selections made in menus.

ESC ESC key - press to return to previous level or to exit menu system without saving.
- press to leave help system.

Menu key - opens the menu system.

Mon A key - assigns front panel keys to monitor A.

Sequence key - view cameras in sequence on full-screen or quad displays.

Zoom key - zooms in on the active camera display (full-screen or active cameo).

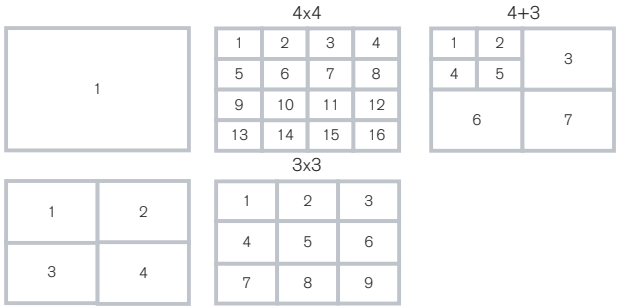
Viewing pictures

Monitor A is the main monitor. It shows full-screen, quad or multiscreen live or playback camera pictures. Status messages, alarms, and video loss warnings are also displayed on this monitor. When the menu system is activated it is displayed on this monitor.

When an alarm is detected, the camera picture is displayed on monitor A. When multiple alarms occur, camera pictures are displayed in quad or multiscreen.

Viewing

The drawing shows all possible views for monitor A. Some multiscreen views may have been disabled during set-up. The Divar model and the number of connected cameras can also influence the multiscreen views available.



The quad mode can have 4 different quad screens that can be shown in sequence to display 16 camera pictures.

Multiscreen

To view different multiscreen displays on monitor A:

1. Press the multiscreen key .
   > A multiscreen display of camera pictures appears on monitor A.
2. Press the multiscreen key again to go to the next programmed multiscreen view.
   > If you continue to press the multiscreen key , the unit cycles through all enabled multiscreen views.

Full-screen

To view a full-screen shot of a camera:

1. Press a camera key.
   > A full-screen shot of the camera you selected appears.
   > The camera key of the selected camera lights (green).
2. Press the multiscreen key to go back to your previous multiscreen view on monitor A.

Sequence

To view a sequence of live camera pictures of several cameras:

1. Press the ALT key and then the sequence key .
   > The indicator lights.
   > A sequence of camera pictures appears, each for a pre-programmed dwell time.
2. Press the ALT key and then the sequence key to stop sequencing.
   > Zooming, pressing the multiscreen key or selecting a single camera also stops sequencing.

Cameo assignment

Assigning cameras to cameos in a multiscreen view:

1. Press the ALT key ALT and then the multiscreen key ⊞.
   > The multiscreen key indicator flashes.
   > The border around the active cameo is green.
   > The camera key of the camera shown in the active cameo lights (green).
2. Use the arrow keys if you wish to select a different cameo.
3. Press a camera key to display that camera's picture in the active cameo.
   > The camera is assigned and the following cameo becomes active.
4. Continue to press camera keys to assign camera pictures to cameos.
5. Press the ALT key ALT to interrupt cameo assignment and exit the assignment mode.
   > The assignment mode is automatically ended when the last cameo has been assigned.

The cameo assignment that you make is used in playback mode as well as in live mode.

Image freeze

Freezing a camera shot on monitor A:

1. Press the pause key ⏸ to freeze the picture in the active cameo.
2. Press the pause key ⏸ again to return to live viewing.

If you are viewing a camera picture in full-screen mode, then this picture is frozen. The zoom function can be used on a frozen picture. If you change viewing mode, any frozen pictures are released.

Zoom

To zoom in on a camera picture:

1. Press the ALT key ALT.
   > The ALT indicator lights.
2. Press the zoom key 🔍.
   > The zoom indicator lights.
   > The picture is enlarged by a factor of 2.
3. Use the arrow keys to select the area of the picture to be displayed.
4. Press the zoom key 🔍 again to zoom in further.
   > The picture is enlarged by a factor of 4.
5. Use the arrow keys to select the area of the picture you want to see.
6. Press the zoom key 🔍 again to return to a full picture and leave the zoom mode.
   > The zoom indicator no longer lights.
7. Press the ALT key ALT to return the keys to normal operation.
   > The ALT indicator no longer lights.

Live, playback and search modes

Live mode

The live mode is the normal operating mode of the unit where you watch live pictures from the cameras. From the live mode you can switch to the search mode, the playback mode or to the system menu. Access to search and playback functions may require a password. Discuss this with your administrator.

Press the search key Search to switch to the search mode. The search menu opens.

To enter the playback mode use one of the following keys:

- Press the rewind key ◀◀ to start reverse playback of recordings for the displayed cameras.
- Press the forward key ▶▶ to start playback from one minute earlier.
- Press the play key ▶ to resume playback from the last selected playback position.

Press the live key Live to switch back to live viewing. An alarm also switches the unit back to live viewing.

Playback mode

In playback mode the video control keys operate as follows:

- Press the rewind key ◀◀ to start reverse play of recordings. Pressing it again and again increases the display rate to a maximum and then back to normal speed again. Press the rewind key ◀◀ in the pause mode to step back one field at a time.
- Press the pause key ❚❚ to freeze the picture.
- Press the forward key ▶▶ to start forward playback of recordings. Pressing it again and again increases the display rate to a maximum and then back to normal speed again. Press the forward key ▶▶ in the pause mode to step forward one field at a time.
- Press the play key ▶ to resume playback.

Press the live key Live to switch back to live viewing or press the search key Search to switch to the search mode. In both cases, playback stops.

Archiving a video recording**

1. Press the pause key ❚❚ for longer than one second during playback to mark the beginning of a video segment for archiving.
   > A dialog window appears.
   > The time and date of the marker at which the video segment starts is shown.
2. Press the select key ↵ to continue playing the video you wish to archive.
3. During playback, press the pause key ❚❚ for longer than one second again to mark the end of the video segment.
   > A dialog window appears.
   > The date and time of the beginning and end markers of the video segment is shown.
4. Select **Yes** to write the marked video segment to a (re)writable disk.

The software required to play a video segment on a PC (the Archive Player) is copied to the disk when a local archive is made. To ensure that this software is present in the Divar, use the supplied CD-ROM to load the latest version of the Archive Player into the Divar.

Search mode

Press the search key Search to open the search menu. Use the search menu to search for stored video recordings.

```
PLAYBACK SEARCH
  SEARCH EVENT FILTER          ALARM/MOTION
  CAMERA                       ALL
  SEARCH DIRECTION             FORWARD
  START TIME                   2002-03-14 13:00
  END TIME                     2002-03-14 14:00

  START SEARCH                                  >

  DISK CONTENTS
  EARLIEST TIME                2002-03-14 14:00
  LATEST TIME                  2002-06-19 20:23

                               1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
  FILTER                       ☑☑☑☑☑☑☑☑☑☑☑☑☑☑☑☑
```

>> SEARCH CRITERIA

- Set the **Event filter** to search for only alarm events, only motion events or both.
- Set to **None** so that the search is not restricted by events.
- Specify the cameras to search for. The selected cameras are shown at the bottom of the menu with a check mark. Press a camera key to change the selection.Select **Forward** to search from start time to end time or **Backward** to search from end time to start time.
- Fill in a time and date from which to start the search.
- Fill in an end time and date to limit the time span of the search.
- Select **Start Search** (or press F2) to initiate the search procedure.
- Press the escape key ESC to exit the search mode and return to the previous mode.

>> SEARCH RESULTS

- The recording fitting the filter and closest to the selected date and time is shown first.
- Use the up/down arrow keys to move through a long list. The selected recording is shown.
- Press the select key ↵ for a full-screen playback of the selected recording.
- Press the search key Search during playback to return to the list.
- Press the escape key ESC to return to the filter menu.

```
PLAYBACK SEARCH
SEARCH RESULTS
  CAMERA 1          MOTION          2002-03-14 15:00:17
```

Triggers and alarms

Various types of events can change the way the unit works. These events can be:

- An alarm input signal applied to the unit.
- Motion detection in a camera signal.
- A loss of video from one of the cameras.
- An internal alert from the unit itself.

The way the unit reacts to events depends on how it has been programmed.

An event can cause either a trigger or an alarm. A trigger can change the way the unit works but does not require a response from the user. An alarm can also change the way the unit works but, in addition, it usually activates several indicators and requires that the user acknowledges the alarm situation.

The unit can react to an event in any one of the following ways:

Alarms

- A beeper sounds
- A status message is displayed
- An alarm icon is displayed
- The border around a cameo can change color
- An alarm indicator , or flashes
- The ACK indicator flashes
- An output relay is activated

Alarms and Triggers

- The view modes on the monitors change
- A controllable camera is moved to a pre-defined position.
- Recording speed changes

Background events

Triggers and alarms can change background tasks that you, as user, may not even notice. Unit responses that are not visible to the user are, for example, a change in recording speed, the activation of the output relay and event logging. A trigger may change the way the camera images are displayed on the monitor without requiring your intervention.

Alarm inputs

If an input causes an alarm

- The camera causing the alarm is displayed on the full screen.
- The alarm icon is displayed. An alarm status message is displayed.
- The alarm beeper sounds. The alarm and the ACK indicators flash.
- A controllable camera might be moved to a pre-defined position.

Acknowledging an input alarm

1. Press the acknowledge key ACK to acknowledge the alarm.
   > The beeper is silent.
   > The alarm and ACK indicators are no longer lit.
   > The alarm status message disappears.
   > The last-used view mode is restored.

The alarm icon remains visible as long as the input causing the alarm is active.

If an alarm is not acknowledged, the beeper switches off after the dwell time but the alarm still needs to be acknowledged.

If auto-acknowledge is enabled, the beeper, and the alarm and ACK indicators switch off after the dwell time.

Video loss alarm

If the loss of a video signal causes an alarm:

- Monitor A switches to multiscreen view. The lost camera signal is displayed as a black cameo with the video loss message. The border around the camera with the video loss is red. An alarm status message is displayed.
- The alarm beeper sounds.
- The video loss and the ACK indicators flash.

Acknowledging a video loss alarm

1. Press the acknowledge key ACK to acknowledge a video loss alarm.
   > The beeper is silent.
   > The video loss and ACK indicators are no longer lit.
   > The alarm status message disappears.
   > The last-used view mode is restored.

If the camera with video loss is visible, the black cameo and the video loss message continue to be displayed as long as there is no video present.

If an alarm is not acknowledged, the beeper, and the video loss and ACK indicators switch off after the dwell time but the alarm still needs to be acknowledged.

If auto-acknowledge is enabled, the beeper, and the video loss and ACK indicators switch off after the dwell time.

Multiple alarms

Monitor A switches to multiscreen view if more than one alarm occurs. The latest alarm status message is always shown. Pressing the acknowledge key ACK deactivates all alarms.

CHAPTER 4

Hardware setup

This chapter contains detailed information about the connection of external equipment to the unit. The connector types and their pin signals are described. All the connectors are located at the rear panel of the unit.

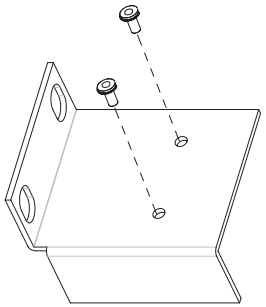
Rack mounting

The Divar can be mounted in a 19-inch rack. A rack mounting kit is supplied with the unit that includes:

- left and right rack mount ears
- four Torx screws with integrated lock washers.
- a Torx screwdriver

Mounting

1. Remove the four Torx screws (two on each side) located near the front panel on the right and left side of the housing.
2. Attach the mounting ears to each side ensuring that the lip is **under** the unit. Use the four Torx screws with lock washers and tighten securely.



3. Install the unit into the rack using the rack manufacturer's supplied hardware.

When installing the assembly into the rack, be careful not to restrict airflow around the vent holes located in the side panels or to exceed the recommended operating temperature.

Camera connections

Connect cameras to the unit using 75-ohm video coaxial cables with BNC connectors. The Divar automatically configures itself as a PAL or NTSC unit. The unit determines the standard by detecting the signal format of the first connected camera (lowest camera input number).

Specification

Input signal:	Composite video 1Vpp, 75 Ohm
Color standard:	PAL/NTSC, auto-detect.
Gain control:	Automatic or manual gain control for each video input.
Connector type:	BNC, automatic termination.

Monitor connection

Connect the unit to the monitor using 75-ohm video coaxial cables with a BNC connector. The unit provides a 1Vpp CVBS signal.

If the monitor has a loop-through connection and you are not using the loop-through output, then select the 75-ohm impedance setting on the monitor. If the monitor's loop-through output is connected to an additional device, the device's termination is set to 75 ohms and the monitor's termination is set to high impedance. (Note that this is not necessary on devices with automatic termination.)

Specifications

Output signal:	Composite video 1Vpp, 75 Ohm, Sync. 0.3Vpp ±10%
Resolution:	720 x 576 PAL, 720 X 484 NTSC
Connector type:	BNC

Console port connection

The serial RS232 console port connector is used to connect a PC to the unit for configuration or service purposes. Use a null-modem cable to connect the serial port of the PC to the unit. The Baud rate can be selected in the menu system.

Specification

Connector type:	9-pole D-type male connector
Maximum input voltage:	±25V
Communicaton protocol:	Output signals according EIA/TIA-232-F

RS232 console port socket

Signal Name:	Pin no.	Description
DCD_in	1	Carrier detection signal (not used).
RX	2	RS232 receive signal
TX	3	RS232 transmit signal
N/C	4	No Connection
System Ground	5	System Ground
N/C	6	No Connection
RTS	7	RS232 request to send signal
CTS	8	RS232 clear to send signal
N/C	9	No Connection

Panel view

Keyboard connection

The keyboard input connector is used to connect an external keyboard to the unit. Connect the keyboard to the KBD IN connector.

For short distances (up to 30m), standard 6-core telecom flat cable can be used to supply power and signal connections for the keyboard.

For distances over 30m between keyboard and Divar, the Keyboard Extension Kit (LTC 8557) must be used. This kit provides junction boxes, cables and the appropriate power supply for the external keyboards. The recommended cable type is Belden 9841 or equivalent.

Specifications

Communicaton protocol:	RS485
Maximum signal voltage:	± 12V
Power supply:	11 - 12.6V, maximum 400mA
Maximum cable length:	1.5 kilometers
Cable type:	black (cross-over) cable (supplied with keyboard)
Termination:	390 Ohm terminator

Keyboard In - RJ11 socket (KBD IN)

Pin no.	Signal
1	+12 V DC (11V Min to 12.6V Max, 400mA Max)
2	System ground
3	Keyboard plus line
4	Keyboard minus line
5	System ground
6	System ground

Panel view

Ethernet connection

The standard RJ-45 Ethernet socket is used to connect the unit directly to a PC or to a network.To connect directly to a network hub, use a straight-through network cable. To connect directly to a PC, use the supplied cross-over network cable. Consult with your local IT personnel for the specific type of cable needed. The cable length from node to node is limited to 100 feet (30.5 meters) maximum length and 6 feet (1.8 meters) minimum length.

Network configuration

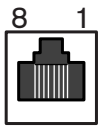
The Divar is delivered with the DHCP function switched on, so IP addresses are assigned automatically if the network server uses DHCP. (Refer to the System settings/Connectivity/Network setup menu.)

Specifications

Connection:	10/100 BaseT, IEEE 802.3
Differential signal voltage:	± 2.8V max, inputs have transient overvoltage protection.
Port details:	IEEE 802.3/802.3u - 100Base-TX/10Base-T physical layer.
	Auto Negotiation: 10/100, Full / Half Duplex
Cable length:	100 Meters: 100 Ohm unshielded twisted pair cable, category 3/4/5.
	100 Meters: 150 Ohm shielded twisted pair cable.
Impedance:	In-built compensation for impedance matching.
Indicators:	ACT, 10, 100

LAN - RJ-45 Ethernet socket

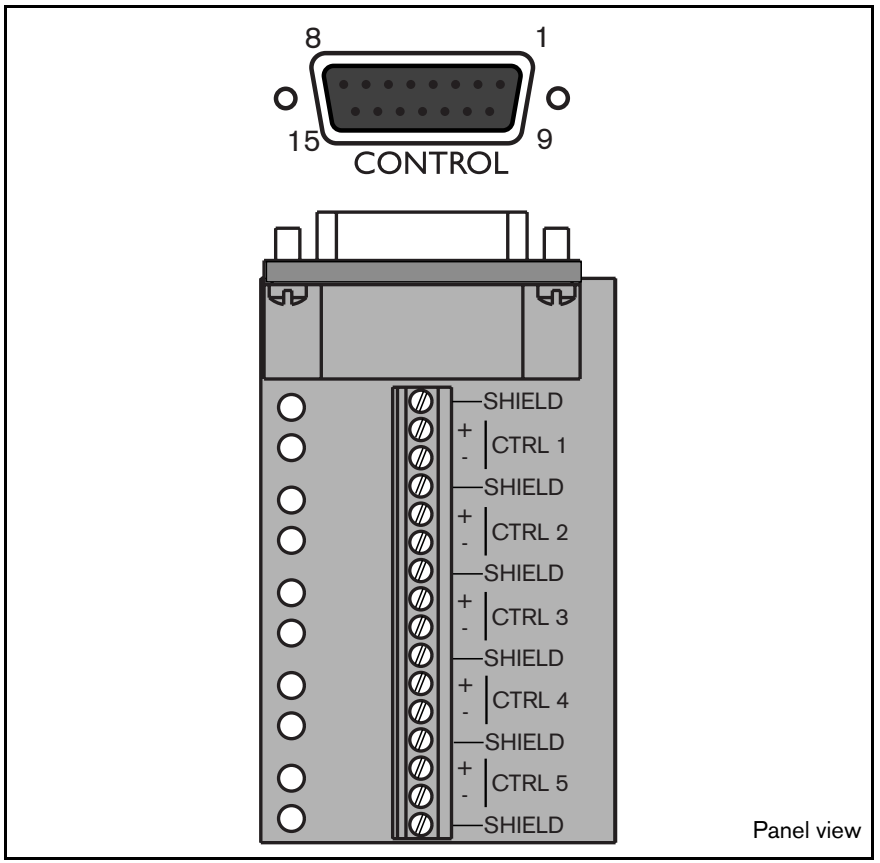
Signal Name:	Pin no.	Description
LAN_TX+	1	Ethernet transmit line plus
LAN_TX-	2	Ethernet transmit line minus
LAN_RX+	3	Ethernet Receive line plus
N/C	4	No Connection
N/C	5	No Connection
LAN_RX-	6	Ethernet receive line minus
N/C	7	No Connection
N/C	8	No Connection



Panel view

Control port

The control port is a bi-phase port for connecting the control units of controllable cameras. Five bi-phase outputs are provided for dome camera and pan, tilt and zoom control. The screw terminal connection board supplied with the unit simplifies all bi-phase connections to the unit.



Panel view

Specifications

Output impedence: 128 Ohm

Overvoltage protection: ±30V max.

Differential voltage amplitude: 1V min, 2V max. with a characteristic load of 220 Ohms connected across the differential output

Cable length: 1.5 Kilometers max.

Recommended cable: Belden 8760

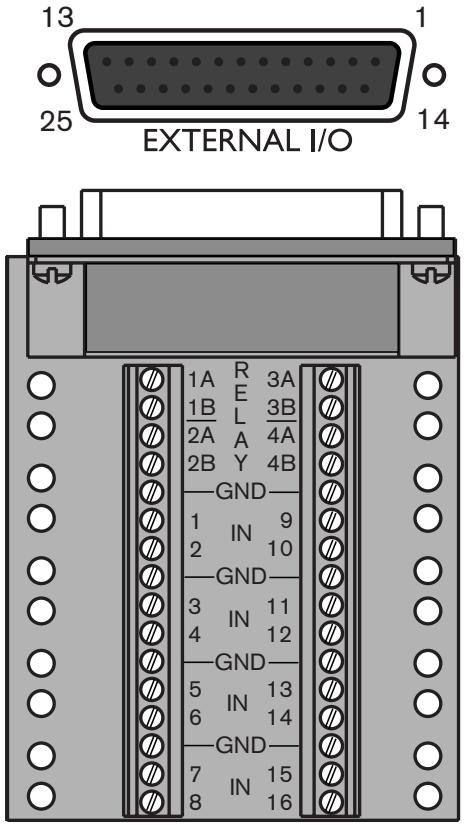
Number of loads per output: 4 max.

Control port - 15-pole D-type socket

Signal name:	Pin no.	Description
Code 1 -	1	Bi-phase control ch. 1 (minus)
Code 1 +	2	Bi-phase control ch. 1 (plus)
Shield	3	System ground/cable shield.
Code 2 -	4	Bi-phase control ch. 2 (minus)
Code 2 +	5	Bi-phase control ch. 2 (plus)
Shield	6	System ground/cable shield.
Code 3 -	7	Bi-phase control ch. 3 (minus)
Code 3 +	8	Bi-phase control ch. 3 (plus)
Shield	9	System ground/cable shield.
Code 4 -	10	Bi-phase control ch. 4 (minus)
Code 4 +	11	Bi-phase control ch. 4 (plus)
Shield	12	System ground/cable shield.
Code 5 -	13	Bi-phase control ch. 5 (minus)
Code 5 +	14	Bi-phase control ch. 5 (plus)
Shield	15	System ground/cable shield.

External I/O connection

Alarm inputs and outputs are supplied via a 25-pole D-type socket. The screw terminal input/output connection board supplied with the unit simplifies all alarm connections to the unit. All inputs and outputs are N/O.



Panel view

Connecting the Inputs

Each (alarm) input line can be switched by a relay contact from devices such as pressure pads, passive infra-red detectors, smoke detectors and similar devices.

Connecting the Alarm Outputs

The four alarm output relays respond to input alarms and triggers. The relays are active for the duration of the driving event. Connect the application to the alarm output relays (resistive loads only). Do not exceed 30 Vac, 40Vdc, 500 mA (continuous) or 10VA on an alarm output relay's contacts. The contacts must not be used at AC line voltages.

Specifications

Alarm input impedence:	Internal pull-up 10K to +5V
Input voltage range:	-0.3V min to 30V max
Input voltage treshold:	Low voltage 0.8V max
	High voltage 2.4V min
Switching current (resistive):	500mA max
Carrying power:	10VA max
Switching voltage (resistive):	30 Vac / 40 Vdc max

External I/O - 25-pole D-type socket

Signal name:	Pin no.	Description
Alarm_in_1	1	Alarm input 1
Alarm_in_2	2	Alarm input 2
Alarm_in_3	3	Alarm input 3
Alarm_in_4	4	Alarm input 4
Alarm_in_5	5	Alarm input 5
Alarm_in_6	6	Alarm input 6
Alarm_in_7	7	Alarm input 7
Alarm_in_8	8	Alarm input 8

Signal name:	Pin no.	Description
Alarm_in_9	9	Alarm input 9
Alarm_in_10	10	Alarm input 10
Alarm_in_11	11	Alarm input 11
Alarm_in_12	12	Alarm input 12
Alarm_in_13	13	Alarm input 13
Alarm_in_14	14	Alarm input 14
Alarm_in_15	15	Alarm input 15
Alarm_in_16	16	Alarm input 16
Relay1_A	17	Relay 1 output pole 1
Relay1_B	18	Relay 1 output pole 2
Relay2_A	19	Relay 2 output pole 1
Relay2_B	20	Relay 2 output pole 2
Relay3_A	21	Relay 3 output pole 1
Relay3_B	22	Relay 3 output pole 2
Relay4_A	23	Relay 4 output pole 1
Relay4_B	24	Relay 4 output pole 2
System Ground	25	Chassis Ground

Power Supply

Power is supplied to the unit via the IEC-style socket. The unit has no on/off switch for security reasons. This means that the unit is always powered as long as the power cable is connected from the unit to a live power socket.

Specifications:

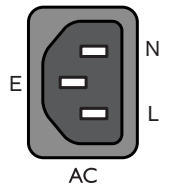
Input Voltage: 100 - 240 Vac ±10%

Current: 0.7A - 0.3A

Input Frequency: 50/60 Hz

Power supply socket

Signal name:	Pin no.	Description
LIVE	1	AC live
NEUTRAL	2	AC neutral
PE	3	Protective Earth



Panel view

Testing

In Live mode, select full-screen display for each camera and check the picture quality. If the quality is poor, check:

- The BNC connections.
- Video levels of incoming signals and the possibility of ground loops.

Record for at least three minutes at the highest recording speed, then play back the recording, selecting each camera for full-screen display in turn. Check the playback picture quality. Check to see whether the programmed quality setting is adequate.

Maintenance

Maintenance of this unit is limited to external cleaning and inspection. Refer all servicing to qualified personnel.

WARNING!

Do not open the top cover or attempt to service the unit as this may expose you to dangerous voltages and other hazards. Opening the unit will void the warranty!

CHAPTER 5 Menu system

You access all the parameters used to set up the unit via the menu system. The large number of parameters available gives you the opportunity to program an extensive functionality.

There are two ways of accessing the menu system, via the keys on the front of the unit itself or via the PC-based Configuration Tool application. Using the keys on the unit has the advantage of not requiring a PC and is the recommended method if you are using the unit in a stand-alone configuration. If you do have a PC connected to the unit or the unit is used in a network environment, then the Configuration Tool offers a more convenient way of accessing and using the menu.

In both cases the parameters available are the same. Slight differences in navigation and selection are only due to the differences between the keys on the unit and the keyboard and mouse interface of the PC. The menu structure is the same in both cases.

This chapter explains how to use the keys on the unit to access the menus. It also documents the full structure of the menu system. To find out how to use the PC-based Configuration Tool refer to Chapter 6.

Overview of the menu system

The main menu consists of six menu groups:

History. The **History** menu allows you to trace all events that have occurred on the unit.

Disk manager. The **Disk Manager** menu provides information and functions that relate to the maintenance of the storage system.

Time/Date. The **Time/Date** menu is used to set the actual reference time and date for the unit and the format that is used to display them.

View settings. The **View Settings** menu is used to program how the individual cameras are displayed on the monitor.

System settings. The **System Settings** menu is where most of the static parameters for the unit are set.

Profiles. The **Profiles** menu is used to set up and store the dynamic characteristics of the unit.

Setting the dynamic characteristics

The settings in the **Profiles** menu provide the opportunity to tap the powerful functionality of the unit. By spending some time in planning and setting up the three profiles available, you can provide efficient use of resources while maintaining effective cover for most types of working situations.

Profiles are usually based on a calendar, switching on and off at a particular date or time (for example, weekends or night). A profile determines how a unit behaves when that profile is active. Unit behavior includes how events are handled. It also defines recording rates both under normal conditions and in response to input and motion events.

Unit behavior can be set up differently for each of the three profiles.

Accessing the menu from the unit

To open the menu:

1. Press the ALT key ALT to enter the alternate function mode.
   > The ALT indicator lights.
2. Press the menu key.
   > The main menu appears full-screen on monitor A.

Navigating

- Use the arrow keys to move through a menu or list.
- Use the select key ↵ to select a submenu or item.
- Use the escape key ESC to go back.

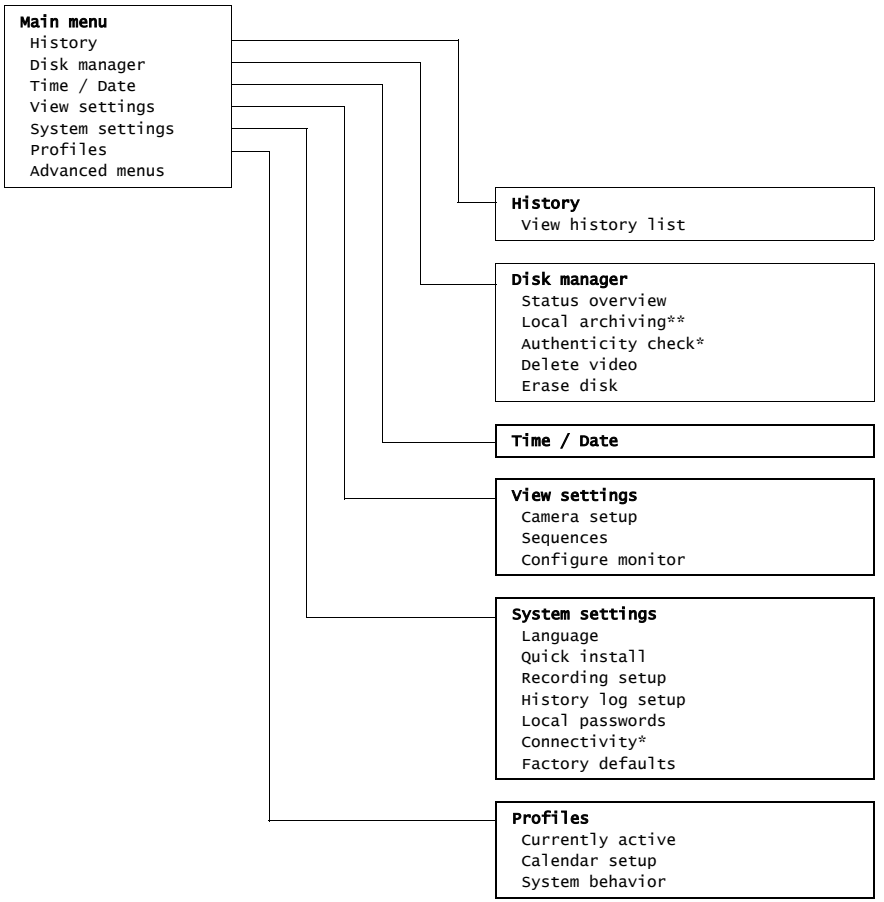
Access to some menu items can be password protected.

Main Menu

The main menu gives access to six major menu groups. Each of these groups has a submenu tree where the values and functions can be selected.

- Set **Advanced Menus** to **Yes** to see all items; set to **No** for standard features only.

MAIN MENU	
HISTORY	>
DISK MANAGER	>
TIME / DATE	>
VIEW SETTINGS	>
SYSTEM SETTINGS	>
PROFILES	>
ADVANCED MENUS	NO



* advanced items

HISTORY >

The **History** menu provides a list of all events that have occurred. This list can be filtered to show only those events you wish to see.

MAIN MENU	
HISTORY	
VIEW HISTORY LIST	>
BEGIN TIME	2002-03-14 13:00
END TIME	2002-06-19 20:23
SHOW	
ALARMS	YES
MOTIONS	YES
NETWORK CONNECTIVITY	YES
ERRORS	YES
EARLIEST TIME	2002-03-14 13:00
LATEST TIME	2002-06-19 20:23

>> HISTORY FILTER

- Fill in the date/time values to restrict the period for viewing events.
- Select **No** for those events that you do not wish to see.

>> HISTORY LIST

- The latest event is shown first.
- Use the right/left arrow keys to move through a long history list.
- If a date or time has been changed, the original values are also displayed.
- Alarm, motion and video loss events are stored for a maximum of one month.

DISK MANAGER >

The Disk Manager menu gives access to information on the internal hard disk(s). The status of the recorded video and associated data is also accessed via this menu. Archiving is accessed via this menu. Access to some menus may be password protected.

MAIN MENU
DISK MANAGER
STATUS OVERVIEW >
LOCAL ARCHIVING** >
AUTHENTICITY CHECK >
DELETE VIDEO >
ERASE DISK >

>> STATUS OVERVIEW

- **Disk Capacity** shows the total space available in Gigabytes.
- **Used Space** shows the total space used by all video recordings.
- The displayed **Time Till Overwrite Appr.** value depends on the recording options that are set, and alarm and motion frequency. The estimated recording time shown depends on the available storage capacity and recording setup.
- The **Video-delete Period** value (**1** to **99** days or **None**) selects the length of time recorded video is retained before it is automatically deleted. Selecting **None** disables this feature. If you have a small disk, the video might be overwritten earlier than the selected video-delete period. This feature does not protect video from deletion.

>> LOCAL ARCHIVING**

- Select **Archive Setup** to check the status of the writer, the progress of the writing, or to erase or format rewritable disks.
- Select **Archive Session** to make a list of the video segments to be archived and to start writing.

>>> Archive Setup

- Progress is shown as a percentage of the current activity.
- Select **Cancel Archiving** (or press F2) to stop the current archive session (this can result in an unusable disk).
- Set **Finalize** to **Yes** if the disk is to be finalized after archiving.
- Select **Erase Rewritable** to remove all data from a rewritable disk.
- Free Space shows the free space available on the inserted disk.

>>> Archiving Session

- Fill in a begin and end, date and time for the video segment you wish to archive. Select those cameras that you wish to archive. A check mark under a camera number indicates that it will be archived. Press a camera key on the unit to de-select a camera. By default all cameras are archived.
- Select **Add to Archive List** (or press F2) to place it in the list.
- Select **View Archive List** to review the selected video segments and to start the archiving procedure.
- The archive list is saved until archiving is carried out. Video segments that have been partially overwritten or deleted are removed from the list.

View Archive List

- To remove a video segment from the list, select it with the arrow keys and press F2.
- The selected cameras for each video segment are shown when the video segment is highlighted.
- Select **Start Archiving** to write the video segments to disk.
- If the total size is greater than the disk capacity, then only the first segments that fit are archived. Those segments that are not archived remain in the list so that they can be archived to a new disk.

Add to Archive List

- Fill in a begin and end, date and time for the video segment you wish to archive. Select those cameras that you wish to archive. Select **Add to Archive List** (or press F2) to place it in the list.

>>> Finalize

- Set **Finalize** to **Yes** if the disk is to be finalized after archiving.
- If a disk is not finalized it can be used for multiple sessions. If finalized, older CD players can read it but new sessions cannot be added anymore.

>> AUTHENTICITY CHECK

- This check verifies that video images and associated data have not been modified.
- Select the period within which the authenticity check runs. The default values are the same as the earliest and latest available recording times.
- Press the escape key ESC to cancel the check.
- During the check all other front panel keys are disabled.
- If the result is **Not OK**, the date and time of the tampered video is displayed.

>> DELETE VIDEO

- Delete recorded video by filling in an end date and time, and selecting delete video.
- You must confirm the deletion.

>> ERASE DISK

- Deletes all recorded video on the disk.
- You must confirm the deletion.

TIME/DATE >

MAIN MENU		
TIME/DATE		
TIME ZONE	GMT	+01:00 WEST-EUROPE
TIME FORMAT		24 HOUR
TIME		14:00:17
DATE FORMAT		YYYY-MM-DD
DATE		2002-06-19
SYNCHRONIZE		>
DAYLIGHT SAVING		YES
START DATE/TIME		LAST SUN MAR 02:00
END DATE/TIME		LAST SUN SEP 03:00
OFFSET		01:00

- Select a time zone from the list. (Daylight saving time is adjusted accordingly.)
- Fill in the actual time and date.
- Select either a 12-hour or a 24-hour clock format.
- Select from three date formats which show either the month (MM), the day (DD) or the year (YYYY) first.
- Set **Daylight Saving** to **Yes** to enable it. Fill in the day, month and time of both change-overs and the offset if it differs from the information associated with your time zone.

>> SYNCHRONIZE

- Use the **Synchronize** function to set the time of the unit from the time of the network. (Synchronize only works if the Divar time is within 7½ minutes of the server time.) Fill in the IP address of the network time server. If a time server is not present on the same subnet, the Divar searches for a suitable time server outside its own network. Make sure the Divar gateway is set correctly to find the time server. Ensure that firewalls do not block NTP traffic via port 123.
- The time and date of all other connected units are automatically synchronized every hour from the time and date of the unit with DVR ID 1.

VIEW SETTINGS >

The **View Settings** menu allows you to set up the display of the individual cameras. You can also set the sequence in which the cameras are displayed and the duration. Use the **Configure Monitor** submenu to set up the monitor display.

```
MAIN MENU
VIEW SETTINGS
  CAMERA SETUP                    >
  SEQUENCES                       >
  CONFIGURE MONITOR               >
```

>> CAMERA SETUP

Use the **Camera Setup** menu to access the submenus for setting the camera names, for locking cameras and for controlling cameras.

>>> Camera name

- Select a camera by pressing a camera key on the unit. The number of the camera is the number of the connector at the rear of the unit to which it is connected.
- Enter a name for the selected camera. The name can be up to 16 characters long.

>>> Camera lock-out

- Locked cameras are not visible during normal use.
- Place a check mark under the number of the camera you wish to lock or press a camera key on the unit to switch the lock on or off.
- Select the **Set Password** submenu and fill in a 4-digit password to restrict access to the camera lock-out menu.

>>> Camera controllable

- A check mark under a camera number indicates that it can be controlled remotely by the Control Center application.
- Press a camera key on the unit to make a camera controllable or not.
- By default all cameras are controllable.

>> SEQUENCES

The sequence in which cameras are displayed on monitor A is set in the full screen list menu.

- Set the length of time each image remains on the screen by filling in the dwell time value.
- Dwell time can vary from 1 to 60 seconds. The default value is 5 seconds.

>> CONFIGURE MONITOR

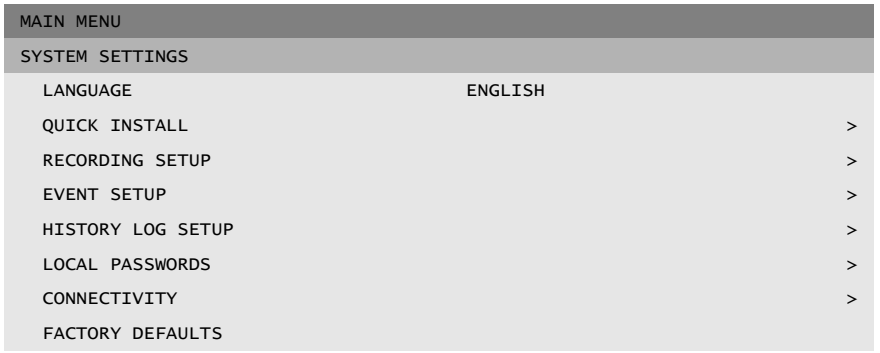
- To view camera names, and time and date on a monitor set these items to **On**.
- Select the position for the text (top or bottom and fine position +11/-11). Select text intensity. Select the border intensity of the cameos from four values.

>>> Multiscreen modes

- Pressing the multiscreen key on the unit cycles through all enabled multiple view modes.
- Enable only those views you wish to see when you use the multiscreen key.
- The multiscreen modes that are available depend on the number of cameras connected and the Divar model.

SYSTEM SETTINGS >

Use the System Settings menu to get access to those items that are used to configure the system.



- Select the language for the menu from the list.
- Select **Quick Install** to quickly set up the system. The quick install menu is described in Chapter 2.
- If you select **Factory Defaults**, all settings in the menu system are reset to their default value.

>> RECORDING SETUP

- The continuous mode overwrites older recordings when the disk is full.
- Set the period (**None** to **99** days) that recorded video is retained before it is automatically deleted. Selecting **None** disables this feature. If you have a small disk, the video might be overwritten earlier than the selected video-delete period. This feature does not protect video from deletion.

>> EVENT SETUP

Use the **Event Setup** menu to specify the display behavior for an input, detected motion or video loss.

- Set the **Alarm Dwell Time** to select the period during which the output relay and the beeper remain active after activation.
- Set the **Trigger Dwell Time** to select the period during which the triggered view mode is displayed after activation.
- The value **Follows** activates the beeper and relay or view, only as long as the event is present.

>>> Input Setup

- Enable the beeper to activate it when an alarm input is activated.

>>> Motion Setup

- Using motion detection outdoors may cause false alarms because of varying light conditions.
- To restore the default motion settings select the **Clear Motion Settings** item.

Motion area

- Select a camera number.
- The **motion indicator** shows the maximum level of camera motion that has been detected for the defined area. Press F2 to clear it if you want to re-test the level of motion detection.
- Use the arrow keys to adjust the **Trigger level** slider to just below the indicated motion level.
- A motion detection signal is generated when the level of motion reaches the trigger level set.

Edit area

- Select **Motion Area** to define the picture area where motion is detected.
- Use the arrow keys to move around the grid. Press F1 to insert a motion detection area and use the arrow keys to enlarge it. Press F1 again to save the area. Press the escape key to cancel and return to grid square selection.
- Press the select key to leave the grid. F2 clears all motion detection areas.

>>> Video loss Setup

- Select the monitor on which the camera with the video loss is displayed.
- Enable the beeper to activate it when any video loss occurs.

>> HISTORY LOG SETUP

- Select **Yes** for those events that you want to log in the history file.
- The entire history list is erased if you select the **Clear History** item.
- Date/time changes of stored video are always logged and cannot be disabled or cleared.

>> LOCAL PASSWORDS

- Set or change the password that allows access to playback functions.
- Set or change the password that allows access to the configuration functions.
- Use the camera keys (1 to 9) on the front of the unit to enter a four-digit password in the dialog box that appears.
- Enter the same password again to have it verified.
- Press F2 to remove password protection.

>> CONNECTIVITY

The **Connectivity** menu gives access to settings that control the behavior of the unit with respect to all external devices or a network. It also gives access to settings for connecting computers via the communications port.

>>> Network setup

- Set DHCP to **Yes** to have IP address, subnet mask and default gateway assigned automatically by the network server. The actual values are displayed.
- Enter a Divar name to be used in the network.
- Fill in the IP, subnet mask and default gateway addresses when DHCP is set to **No**. If required, change the default http port (80) to a new value. The MAC address is read only.
- If **Discovery** is set to **Enabled**, the Control Center can carry out automatic discovery and read the IP address of the unit.
- Restrict the network bandwidth by entering an Mbps between 0 and 100 for the bandwidth limit.

>>> Network access

- Access to the unit via the network can be set for up to two different users.
- Restrict access to the unit by listing an IP address range. The range you use will normally depend on your network setup.
- The administrator is user 1 and is identified as ADMINISTRATOR.

IP Range

- Eight IP ranges can be entered to allow access.
- Enter the same begin and end address to specify a single IP address. Enter different begin and end addresses to specify an IP address range.
- Use the up/down arrow keys to move to an IP entry. Press the select key to edit the entries. Press F1 to set the default values (000.000.000.000 to 255.255.255.255).

Users

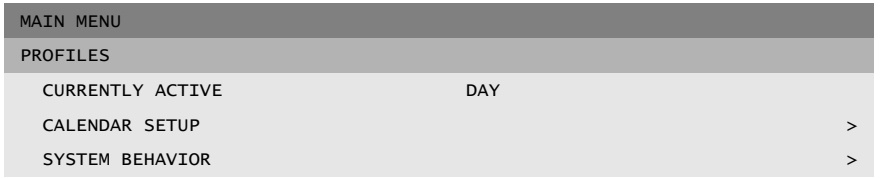
- Enter a name, up to 16-characters long, for each user. Enter a password up to 12-digits long.
- Set User Rights to Live to restrict viewing rights to live video only.
- Select the cameras in the Camera Lock Out submenu that are not accessible for the user.
- Set the camera sequence dwell time (from 3 to 59 seconds) for the remote viewer.
- Set Camera Control to allow control of controllable cameras remotely.

>>> COM port

- The COM port is an RS232 serial port used mainly for connecting a PC to the unit.
- Most parameters are fixed. Select the appropriate baud rate.

PROFILES >

There are three different profiles; Day, Night and Weekend. The profiles contain configuration settings for recording data and handling events. You can define a calendar that automatically selects profiles. These profiles can be configured for day, night, weekend or holidays for example.



>> CALENDAR SETUP

- The use of profiles is defined in a calendar that covers one week. This calendar is then repeated for subsequent weeks.
- A profile is specified at intervals of 15 minutes for each day of the week.
- You can program exception days to change profiles for special days and holidays.

>>> Calendar edit

- The **Calendar Edit** menu shows the profile identification numbers used in a 24-hour period (0 to 23). Each hour is divided into four 15-minute periods.
- To see the other days of the week use the left /right arrow keys.
- Select the **Add Schedule** item to edit the calendar.

Add schedule

- Select the profile name, the begin and end times, and the days on which you want the profile to be active.
- Only five profiles changes can occur in any one day.
- Select a number from 0 to 23 for the hour. Select between 0, 15, 30 or 45 for the minutes.
- If the begin time is later than the end time, then the profile is active from the end time until the begin time on the next day.

>>> Exception days

- Up to 32 exception days can be set that override the calendar list.
- Use the up/down keys to move to an exception entry and press the select key to start editing. Enter the start date/time, the duration and the profile name.
- Press the F2 key to empty an entry.

>> SYSTEM BEHAVIOR

- Use the **System Behavior** menu to configure the event handling and the recording setup for each of the profiles.

>>> Event handling

- Select the profile for which you wish to configure the event handling.
- Move to the line that you wish to change. Press the select key to enable or disable the selection. A check mark means enabled.
- If alarm is checked, the selection acts as an alarm. If alarm is not checked, the selection acts as a trigger.

>>> Recording setup

- Recording behavior for each of the profiles is specified in three submenus. The **Normal** submenu is for a normal situation without alarms or motion events. The **Input** submenu is for input changes. The **Motion** submenu is for motion events.
- The list gives an overview of inputs and motions that are used in any of the profiles. A check mark means used.

`Normal`

- Select the profile. The **Number of active cameras** and the **Average IPS per camera** are shown.
- Set the maximum recording rate and quality level for all cameras. Quality is standard, medium or high.
- IPS rates for PAL range from 0, 1/10 (one image every 10 seconds), up to 25 IPS.
- IPS rates for NTSC range from 0, 1/10 (one image every 10 seconds), up to 30 IPS.
- Select those cameras that you wish to remove from recording. A check mark under a camera number indicates that that camera will not be recording.

`Input`

- Each input, when activated, can change the normal recording behavior of the corresponding camera for a maximum of 120 seconds. If the value is set to **Follows**, then the change is active for as long as the input is active.
- Select the profile.
- Set the recording rate and quality level for all inputs.
- To free IPS bandwidth, the recording rate of cameras not in alarm is limited to the IPS number displayed.

`Motion`

- Each motion input, when activated, can change the normal recording behavior of the corresponding camera for a maximum of 120 seconds.
- Select the profile. Set the recording rate and quality level for all cameras.
- To free IPS bandwidth, the recording rate of cameras not in alarm is limited to the IPS number displayed.

CHAPTER 6

Using the Configuration Tool

The Configuration Tool is a software application that makes the installation and configuration of a unit faster and easier. The Configuration Tool runs on a PC that is connected to the Divar either directly via an RS232 serial connection or via an Ethernet network connection.

Although all settings can also be configured with the on-screen display menu of the Divar itself, the Configuration Tool offers a very user-friendly alternative. It also allows configuration settings to be saved on the PC hard disk. These can be restored later and used to configure other units.

Getting started

To use the Configuration Tool to change settings, the unit must be physically connected to a PC via the RS232 Console Port or via a network connection. The Configuration Tool application must be installed on the PC.

System requirements

Operating platform: A PC or compatible running Windows 95, Windows 98, Windows Millennium, Windows NT 4.0 (SP4), Windows 2000 or Windows XP.

For the Configuration Tool application, the **minimum** PC requirements are:

- Processor: 200 MHz Pentium with MMX (or equivalent)
- RAM memory: 32 MB (depends on operating system)
- Hard disk space: 15 MB free
- Video system: 800x600 with 16-bit color
- Connectivity: A free RS232 port or a 10/100-BaseT network interface

Installing the Configuration Tool

The Configuration Tool is automatically installed on the PC when you install the Control Center application. To install separately:

1. Insert the CD-ROM into the CD-ROM drive on your PC.
   > The installation program starts automatically.
2. If installation does not start automatically, locate the Setup.exe file on the CD and double click it.
3. Follow the instructions on the screen and select to install the Configuration Tool when asked to complete the installation.

Starting the Configuration Tool

Starting the Configuration Tool depends on how you are connected to the unit:

- via a serial RS232 connection,
- via a network, or
- offline

Serial connection

If your PC is connected directly to the unit via the serial RS232 connection, double click the Configuration Tool icon on your desktop window to start the program. Select the **Serial connection** entry from the DVR list.

Network connection

To start the Configuration Tool without using the Control Center, double click the Configuration Tool icon on your desktop window to start the program. Alternatively, select the Divar Configuration Tool program via the Start button on the task bar and the Programs menu item. Follow the login procedure.

To start the Configuration Tool via the Control Center, click the **Config** button in the Control Center window. You must first be logged into the Control Center as an administrator to open the Configuration Tool in this way.

Offline configuration

If you choose to log in with an offline configuration, you should select the Divar version, model, the video standard and the cameras that are connected.

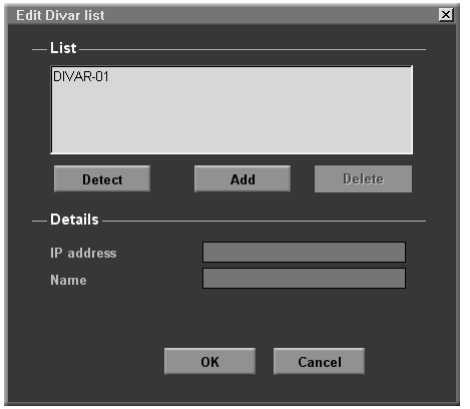
How to Log in

When you start the Configuration Tool as a stand-alone application via a network, the **Login** window appears. (Click **Cancel** to discontinue login and exit the application.)

When the Configuration Tool application is started for the first time, the Divar list is empty. You must first add a Divar to the list. To add a Divar to the list or to modify a Divar entry, click **Edit >>** (see following paragraph).

To modify the Divar list

The **Edit Divar list** window allows you to add Divars to the list or delete Divars from the list.



To automatically detect all enabled Divars on the network:

1. Click Detect.
   > To detect a Divar, Discovery must be enabled on that Divar.
2. Select a Divar and click OK to add the selected Divar to the list.

To add a Divar to the list:

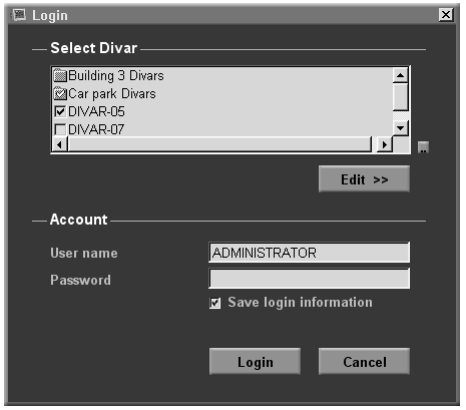
1. Click **Add**.
2. Enter the IP address or nickname of the new Divar.
   > The IP address to be filled-in is set in the System settings/Connectivity/Network setup menu of the Divar itself.
3. Type a name in the Name box or retrieve it from the Divar by checking the **Retrieve from Divar** box.
4. Click **Add**.

To delete a Divar from the list:

1. In the list, select the Divar you wish to delete.
2. Click **Delete**.
   > The selected Divar is removed from the list.

Login

When you start the Configuration tool application, the **Login** window appears. (Click **Cancel** to discontinue login and exit the application.)



To control a particular Divar:

1. Select the Divars you want to control by placing check marks next to them.
   > Click to either select all or none of the Divars listed.
   > If a login group has been defined, you can select this group to log in to the Divars listed in the group.
2. Type your user name and password.
   > The user name and password to be filled-in are set in the System settings/ Connectivity/Network access menu of the Divar itself. Check with your administrator if you do not have access to the unit.
   > To let the system remember your name and password on subsequent uses of the Control Center, place a check mark in the **Save login information** box.
3. Click **Login**.

Maximum number of users

If the maximum number of users for the Control Center is exceeded, a window is displayed. An administrator can use this window to force off a user. The list shows all users that are currently logged in.

To disconnect a user:

1. Select a user in the list.
2. Click **Yes**.

Menu structure differences

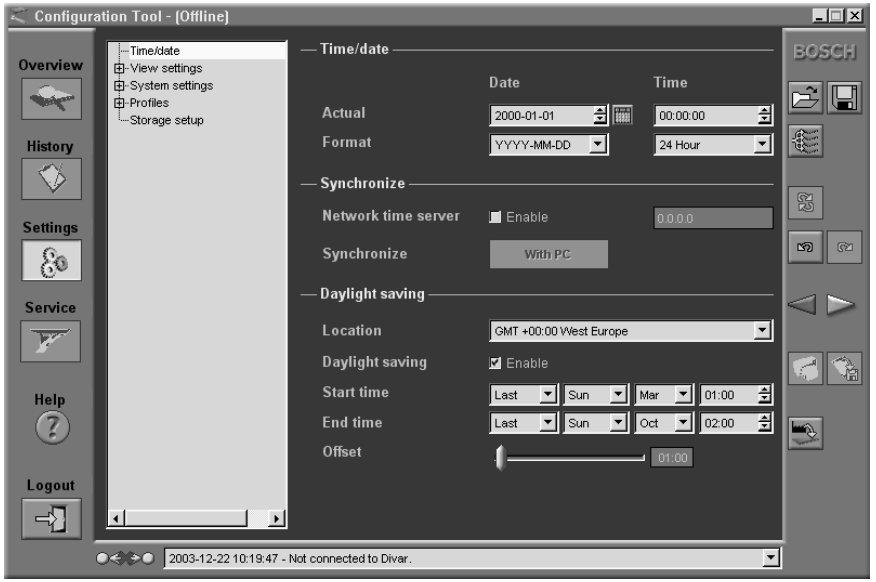
The Configuration Tool allows you to access and use menu items of the unit. These menu items are explained in Chapter 5. Although the items are the same, the menu structure is slightly different in the Configuration Tool:

- The History menu item is removed from the menu tree structure and is now accessed via the History button.
- The Disk manager submenu is replaced by the Storage setup item of the menu tree structure in the Configuration Tool.

As a result of the windows interface, selection and editing of some functions with the Configuration Tool is different to the methods used on the unit itself. For example, scroll bars are used instead of the arrow keys, the motion area selection interface is simpler, and the Calendar edit item of the Profiles menu uses a color code to add profiles to the calendar. The Configuration Tool interface, although different, is intuitive and does not change the functionality of the menu items.

Introducing the main window

The Configuration Tool window is divided into 3 panes. The buttons in the left pane are always available. Clicking one of these buttons changes the contents of the center pane. The buttons in the right pane are control buttons that give you direct access to various tasks.



Overview button

Click the **Overview** button to get general information about the Divar that is connected.

History button

Click the **History** button to display a list of events in the center pane. This list can be filtered to show only those events you want to see.

- Fill in the date/time values to restrict the period for viewing events.
- Uncheck those type of events that you do not wish to see.

The latest event is shown first. If a date or time has been changed, the original values are also displayed. Press **More** to see more events.

Settings button

Click the **Settings** button to display the menu for configuring the Divar. The menu tree structure and the selected submenu is shown in the center pane.

Using the Menu tree

When you click the **Settings** button, the menu tree is displayed on the left of the center pane. Use this tree to navigate through the menu system.

- Click + to expand the branch structure.
- Click - to collapse it.
- Click an entry to display the parameters for that menu item.
- Select the values you want for the parameters.
- These values are updated immediately.

Service button

Click the **Service** button to get a list of diagnostic messages.

Help button

Click the **Help** button at any time to get help. A pop-up help window appears.

Logout button

To return to the Control Center application or to log on to different unit, click the **Logout** button .

Using the control buttons

The right side of the main window has several buttons that allow you to perform common tasks quickly:

Import / Export

All settings that you set in the Configuration Tool can be saved in a file that is stored on the PC disk. You can save as many of these files as you like, just give them different names. The settings in these files can be loaded back into the Configuration Tool either completely or in subgroups. Although these files are stored as text files and can be viewed with a text viewer, do not change or edit them as this makes them unusable.

Import

1. Click the import button to open a settings file.
2. In the dialog box, select the location and name of the file you want to open.
3. Select the groups of settings you want to load and click **OK**.
4. The selected settings are downloaded to the unit immediately

Export

1. Click the export button to save the current settings in a PC file.
2. In the dialog box, select the location and enter a name for the file you want to save.
3. Select the groups of settings you want to save and click **OK** to save the settings.

Multiple download

Click the download button to open a list of the Divars in the network to which you can download selected settings. Select those Divars in the list that you want to update.

Refining settings

When you select Import, Export or Download a pop-up window allows you to select particular groups of settings. You can select **All settings**, **All settings except** or **Only** to determine how the list is constructed. To refine your selection click

and place a check mark next to the settings you want to include in the list.

Refresh

Click the refresh button to refresh the content of the current page settings only.

Undo / Redo

Click these buttons to undo or redo your last action. Up to 100 actions can be undone.

Previous / Next

Use these buttons to move through the settings menu.

Click the previous button to go back to the page that was active before the current page.

Click the next button to activate the next page in the menu system.

Print

When the Overview or History page is active, you can print the complete contents of the page or list.

1. Click the print button to print the current settings.
2. Click **OK** to print.

Save

When the Overview or History page is active, you can save the complete contents of the page or list.

1. Click the save button to save the current settings in a PC file.
2. In the **Save** dialog box, enter a file name and location.
3. Click **OK** to save.

The information is saved in a text file.

Clear

Click the clear button to set all settings on the active page to their default values.

CHAPTER 7

Menu default values

The table on the following pages lists the items of the menu system of the unit with default values. The righthand column of the table gives the default values of these menu items. These values are restored when the **Factory defaults** item of the **System settings** menu is selected.

Level 1	Level 2	Level 3	Level 4	Level 5	Default value
History					
	Show alarms				Yes
	Show motions				Yes
	Show network connectivity				Yes
	Show errors				Yes
Time / Date	Time zone				GMT+01:00 Western Europe (PAL) GMT -06:00 Eastern time (NTSC)
	Time format				24-hour (PAL) 12-hour (NTSC)
	Date format				YYYY-MM-DD
	Synchronize	Use timer server			No
		IP address			0. 0. 0. 0
	Daylight saving				Yes
View Settings					
	Camera setup				
		Camera name			
			Select input		01 . . . 16
			Name		CAMERA 1...CAMERA 16
		Camera lock-out			
			Enter password (only when set)		
				Camera list	No cameras locked
				Set password	No password set

Level 1	Level 2	Level 3	Level 4	Level 5	Default value
		Camera controllable			All cameras selected
	Sequences				
		Sequence dwell time			5 seconds
	Configure Monitors				
		Display titles			On
		Display time / date			On
		Status position			Bottom; 0
		Text intensity			White; clear
		Cameo border intensity			Black
System Settings					
	Language				English
	Recording Setup				
		Record mode			Continuous
		Video-delete period			None
	Event Setup				
		Alarm dwell time			5 seconds
		Trigger dwell time			5 seconds
		Input Setup			
			Beeper		Enable
		Video loss Setup			
			Display monitor		Yes
			Beeper		Enable
	History log setup				
		Log alarms			Yes
		Log motions			Yes
		Log video loss			Yes
		Log errors			Yes

Level 1	Level 2	Level 3	Level 4	Level 5	Default value
		Log network			Yes
	Connectivity				
		Network setup			
			DHCP		Yes
			Discovery		Enabled
			DVR name		DIVAR
			Default gateway		0. 0. 0. 0
			HTTP port		80
			Bandwidth limit		100 MBPS
		Network access			
			IP Range		
				List of IP addresses	0. 0. 0. 0 - 255.255.255.255
			List of users		
				User name	ADMINISTRATOR, USER2
				User rights	Playback
				User password	No password
		Com port			
			Baudrate		9600
			Parity		None
			Bits		8
			Stopbits		1
			RTS/CTS		On
Profiles					
	System behavior				
		Event handling			

Level 1	Level 2	Level 3	Level 4	Level 5	Default value
			Select profile		Day
			Inputs alarm		Enabled for connected cameras
			Motion enable		Disable all
			Video loss enable		Enabled for connected cameras
			Auto acknowledge alarms		Yes
		Recording setup			
			Normal		
				All cameras, quality, IPS	Medium, 1IPS
			Input		
				Recording duration	30 seconds
			Motion		
				Recording duration	15 seconds
Advanced menus					No

CHAPTER 8

Technical specifications

The following pages give the technical specifications of the unit.

Electrical

Voltage and Power

All models	100-240 VAC; 0.7-0.3A, 50/60Hz

Video

Video standard:	PAL/NTSC auto-detect
Resolution:	720 x 576 PAL - 720 x 484 NTSC
AGC:	Automatic adjustment or manual adjustment of gain for each video input
Digital Zoom:	2 or 4 times
Compression:	WAVELET
Inputs:	composite video 0.5-2Vpp, 75 ohm, automatic termination
Outputs:	1Vpp, 75 ohm, sync 0.3 V ± 10%

Alarm Handling:

Inputs:	16 NO
	max. input voltage 40 VDC
Outputs:	4 relay outputs, NO
	max. rated 30 VAC - 40 VDC - 0.5A continuous -10VA

Control

RS232:	Output signals according EIA/TIA-232-F
	max. input voltage ±25V
Keyboard input:	Conform RS485, max. signal voltage ±12V,
	supply 11V-12.6V at max. 400mA
Bi-Phase:	Impedance 128 ohm, max.
	overvoltage protection ±40V, max. cable length 1.5km

Connectors

Video inputs:	6, 9 or 16 BNC, auto-terminating
Ethernet:	RJ45 shielded, 10/100 BaseT according IEEE802.3
Monitors:	BNC, MON-A multiscreen
Alarm connectors:	Screw terminal input
Bi-Phase:	Screw terminal output
RS232:	DB9 male
Keyboard input:	RJ11 (6-pin)

Storage

Hard Disks:	80GB -160GB - 320GB - 600GB
File sizes:	High quality: 40Kb
	Medium quality: 24Kb
	Standard quality: 16Kb
Record Rate (IPS):	NTSC: 60 total, configurable per camera: 30, 15, 10, 7.5, 6, 5, 4, 3, 2, 1, ½, 1/5, 1/10, 0
	PAL: 50 total, configurable per camera: 25, 12.5, 8, 6, 5, 4, 3, 2, 1, ½, 1/5, 1/10, 0, Never
Recording Resolution:	720 x 288 PAL - 720 x 242 NTSC

DVD writer

Write speeds:	DVD+R / DVD+RW: 4x (or higher)
	CD-R: 40x (or higher)
	CD-RW: 24x (or higher)
Divar write speed:	1MB/sec. approx.

Display Modes:

Monitor A:	Full, full sequence, quad, quad sequence, multiscreen, alarm call-up (live and playback)

Recording Modes: Continuous.

Mechanical

Dimensions: 442 x 315 x 66 mm / 17.4 x 12.4 x 2.6 inch
Weight: approx. 7.5 kg / 16.5 lbs

Rack Mount Kit (Included): For mounting one unit in an EIA 19-inch rack.

Environmental

Temperature: Operating (version without DVD writer):
+0°C to +40°C (+32°F to +104°F)
Operating (version with DVD writer):
+5°C to +40°C (+41°F to +104°F)
Storage: -25°C to +70°C (-13°F to +158°F)
Relative humidity: Operating: <93% non-condensing
Storage: <95% non-condensing

Electromagnetic Compatibility

EMC requirements: USA:FCC Part 15, Class B
EU: EMC directive 89/336/EEC
Immunity:EN50130-4
Emission:EN55022 Class B
Harmonics:EN61000-3-2
Voltage fluctuations:EN61000-3-3
Safety: USA:UL6500 2nd edition
EU:CE, EN60950: 2000
Canada:CAN/CSA - E60065-00

Accessories (Optional)

KBD-Digital	Intui-Key keyboard with joystick
LTC 8557	Keyboard Extension Kit
LTC 8782	Bi-phase code translaters

Bosch Sicherheitssysteme GmbH
Ludwig-Bölkow-Allee
85521 Ottobrunn
Germany
www.bosch-sicherheitssysteme.de

Bosch Security Systems B.V.
P.O. Box 80002
5600 JB Eindhoven
The Netherlands
www.boschsecuritysystems.com

© 2006 Bosch Security Systems B.V.
Subject to change.

BOSCH